

Technological and Higher Education
Institute of Hong Kong
香港高等教育科技學院

BEng(Hons) in Building Services Engineering
(BEng-BSE) 屋宇設備工程 (榮譽) 工學士
[SSSDP: JUPAS No. JSSV10]
[Full-time: ST125103] [Part-time: ST525103]

BSE

<http://ibse.hk/>



Member of VTC Group
VTC 機構成員

Ir Dr Sam C M Hui
(BSE Programme Leader)
許俊民 博士 工程師
(屋宇設備工程課程主任)
E: cmhui@vtc.edu.hk



Tsing Yi Campus 青衣校園



VTC Student Dormitory (Tsing Yi) 職業訓練局學生宿舍 (青衣)

880 beds with excellent student-enrichment facilities

More information:

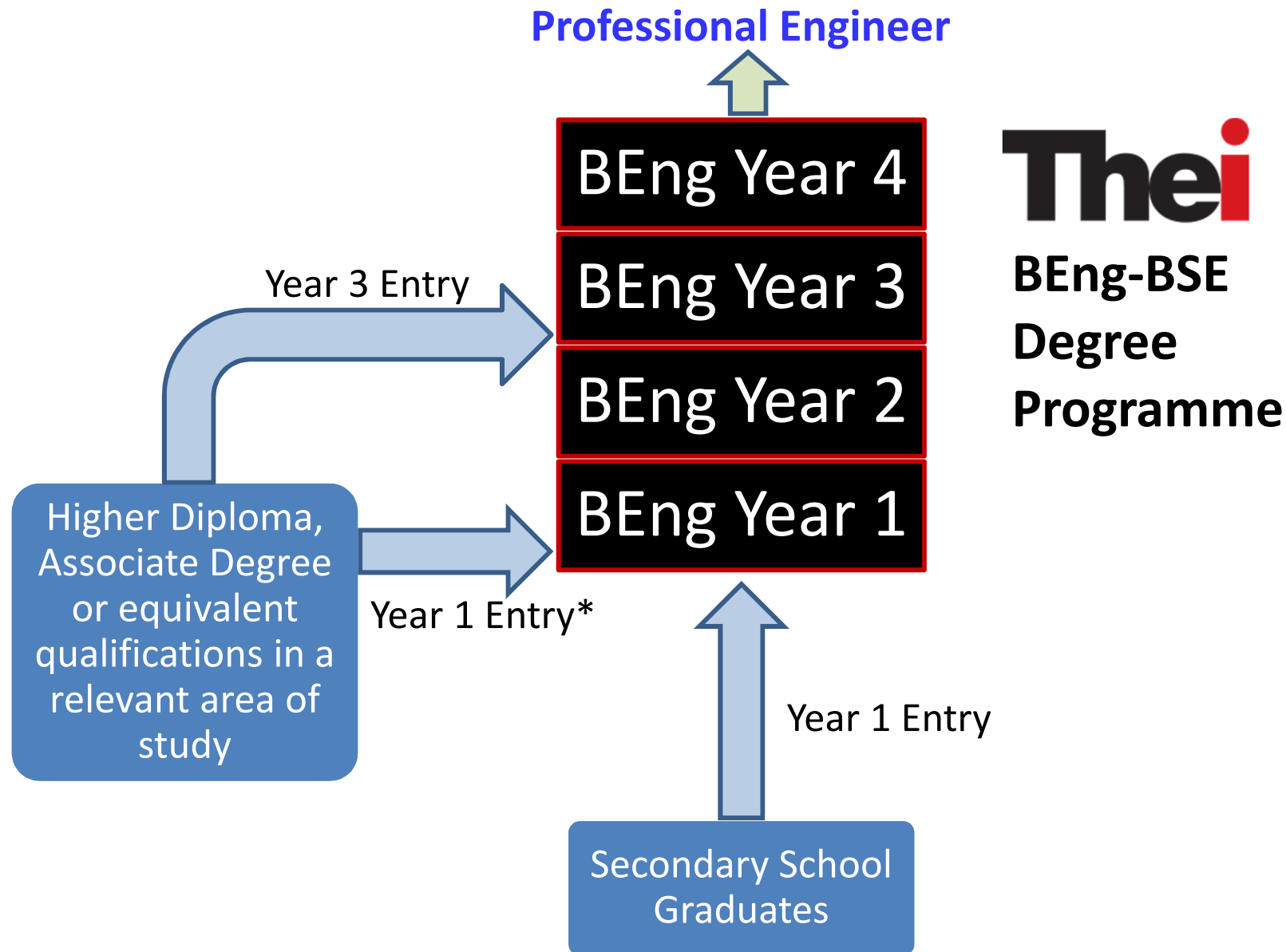
<http://dormitories.vtc.edu.hk/>



Programme Information

Programme and Award Title	Bachelor of Engineering (Honours) Degree in Building Services Engineering
Code	SSSDP: JUPAS No. JSSV10 ST125103 (Full-time) / ST525103 (Part-time)
Faculty	Science and Technology
Department	Construction Technology and Engineering
Area of Study / Programme Area	Building Services Engineering
Qualifications Framework (QF) Level	BEng(Hons) degree award – QF Level 5 Higher Diploma exit award – QF Level 4
Mode and Duration of Study	Year 1 Entry: Full time, 4 years Year 3 Entry: Full time, 2 years; Part time, 4 years
Programme Launch	1 September 2015
Admission	Year 1 Entry (start in 2015-16); Year 3 Entry (start in 2017-18)
Venue	Mainly at Tsing Yi Campus

Admission Process



Remarks:

* Candidates with appropriate qualifications can apply for advanced standing and credit transfer/module exemption (this may help reduce the total duration of study).

Programme Content and Structure

General Education and Languages

- General Education Core and Elective Modules
- Chinese and English Modules

Engineering Fundamentals

- Architecture & Buildings, Built Environment, Engg. Drawing
- Engg. Physics , Calculus , Advanced Engg. Mathematics
- Engg. Thermodynamics, Fluid Mechanics, Heat & Mass Transfer, Numerical Method for Analysis

Building Services Technology

- Electrical Services Fundamental, Advanced Electrical Technology, Power Distribution & Machines
- HVACR I, HVACR II, Indoor Environmental Engineering
- Piped Services, Fire Services, Lighting Technology

Pragmatic Application

- Construction CAD by AutoCAD, Basics of BIM, BIM for BSE
- Engineering Management, Commissioning of Facilities, Design for Operation & Maintenance
- Design Projects (Conceptual/Detail), Appl. Research Project
- Building Sustainability & Green Building Assessment, Building Energy Efficiency cum Carbon Emission
- + Programme Elective Modules, Work-Integrated Learning, Safety, Health & Training

Total 45 modules (132 institute credit units, 4 years)

Programme Aims:

- To develop students to be highly skilled in developing and designing building services systems and be **problem-solvers** to meet ever-changing industry challenges, which involves complex building technology, air conditioning design, and green building assessment
- To equip students with the knowledge and skills of **building services technologies**, with emphasis on using projects as the main learning and teaching assessment method to reflect general industry practice



Programme Objectives (PO):

- **PO1:** Equip students with **solid fundamental knowledge** of science and engineering that will prepare them for professional careers in the building services engineering industry;
- **PO2:** Train students with the abilities to apply theoretical engineering knowledge to **professional practice** and the solution of complex contemporary problems;
- **PO3:** Develop students with **professional skills** in the design, operation, testing and maintenance of building services systems and with **independent problem-solving skills**, as well as good communication skills, so that they can work effectively in a multi-disciplinary project;
- **PO4:** Strengthen students' commitment to understand the importance of **ethical and societal considerations**, including those related to health, safety and environmental sustainability; and
- **PO5:** Build up students' **leadership** with national and international perspectives in the professional building services engineering and with a **lifelong learning** attitude.



Programme Highlights:

- Professional-oriented degree programme with work-ready graduates
- Students gained practical training experiences before graduation
- Fine balance in theoretical and practical education
- Strong emphasis on teaching excellence
- Develop students with integrated concept of building sustainability through the life cycle of a building project, from cradle to grave

* Will seek professional accreditation for Corporate Membership from the Hong Kong Institution of Engineers.



Study Modules in Year 1 and Year 2

BEng Year 1

GEC4201	English for Academic Studies 1
GEC4301	The Human Spirit
SBS4113	Architecture & Buildings
SBS4112	Engineering Physics
SBS4111	Calculus
SBS4114	Built Environment
GEC4101	Chinese 1
SBS4122	Engineering Drawing
SBS4123	Electrical Services Fundamental
SBS4124	Engineering Thermodynamics
SBS4121	Fluid Mechanics
SBS4109	Safety, Health & Industrial Training

BEng Year 2

GEC4302	Habit of Scientific Thinking
---	Select one GE Elective
SBS5211	Advanced Engineering Mathematics
SBS4212	Construction CAD by AutoCAD
SBS4211	Heat & Mass Transfer
SBS5212	Advanced Electrical Technology
GEC5202	English for Academic Studies 2
---	Select one GE Elective
SBS5225	HVACRI
SBS5221	Pipe Services
SBS5223	Power Distribution & Machines
SBS5224	Engineering Management
SBS5222	Indoor Environmental Engineering

Study Modules in Year 3 and Year 4

BEng Year 3

GEC5102	Chinese 2
GEC4303	Social Dynamics of Organisations
SBS5311	HVACRII
SBS5313	Fire Services
SBS5312	Lighting Technology
SBS5314	Commissioning of Facilities
GEC5206	English for Professional Purposes
---	Select one GE Elective
SBS5321	Numerical Method for Analysis
SBS5322	Basics of Building Information Modelling (BIM)
SBS5397	Final Year Project 1 (BSE Conceptual Design)
SBS4309	Industrial Attachment

BEng Year 4

---	Select one General Education Elective
SBS5411	Building Information Modelling (BIM) for BSE
SBS5412	Design for Operation & Maintenance
SBS5413	Building Sustainability & Green Building Assessment
SBS5498	Final Year Project 2 (Applied Research Project)
SBS5421	Building Energy Efficiency cum Carbon Emission
---	Select one Programme Elective
---	Select one Programme Elective
---	Select one Programme Elective
SBS5499	Final Year Project 3 (BSE Detail Design)

What is Building Services Engineering (BSE)?

- About designing, installing & servicing everything that is needed to make buildings comfortable, safe & convenient
 - A very practical, professional engineering field
 - Require knowledge in Physics & Mathematics
- Building Services Engineers collaborate with other professionals to study & design a better built environment
- Related areas/disciplines:
 - HVAC (heating, ventilating & air-conditioning)
 - Fire services
 - Plumbing & drainage
 - Electrical services
 - Other areas, e.g. lighting, security, communication, acoustics, lifts, building management & controls





I Have a Date with BSE

“我和 BSE 有個約會”

BSE



屋宇裝備 / 屋宇設備 /
建築設備 / 機電工程

Building Services Engineer

(http://www.archsd.gov.hk/archsd/html/teachingkits/TK2/index_En.html?v=v4#)(2:11)

HOME 中文 ENG

The Building Process and Teamwork

Project Manager
> Online Viewing > Download

Architect
> Online Viewing > Download

Structural Engineer
> Online Viewing > Download

Building Services Engineer
> Online Viewing > Download

Landscape Architect
> Online Viewing > Download

Quantity Surveyor
> Online Viewing > Download

**Technical Officer
Survey Officers
(Quantity)**
> Online Viewing > Download

Site Supervisor
> Online Viewing > Download

Builder
> Online Viewing > Download

Maintenance Surveyor
> Online Viewing > Download

屋宇裝備工程師
Building Services Engineer

Review the clip of "The Building Process and Teamwork"
> Online Viewing > Download

Architectural Services Department - Copyright(c) 2010 All rights Reserved.

(Source: Architectural Services Department)



Q: Where is this picture taken?

A: Hong Kong International Airport at Chek Lap Kok



Q: Where is this picture taken?

A: Grand Century Place (Moko), Mongkok



Q: How is this picture taken?

A: From the window of a small aircraft (cessna 152)

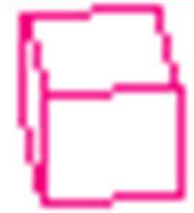
An aerial photograph of a dense urban skyline, likely Hong Kong, featuring numerous skyscrapers and high-rise buildings. The view is from a high vantage point, looking down on the city. The buildings are packed closely together, and the city extends to the water's edge. The sky is clear and blue. A large, dark, rectangular building with a distinctive roof structure is prominent in the foreground. To its right, a tall, dark building with a red horizontal band is visible. The water is a deep blue, and some boats are visible in the distance. The overall scene is a high-angle, wide-area shot of a major metropolitan area.

Q: How is this picture taken?

A: From the top of International Finance Centre Two

Why BSE is important to us?

- Significance of BSE
 - Building services systems are all the internal systems that make a building function
 - It is important for every building & the society
 - It affects people's comfort, health, productivity & safety
- Building Services Systems
 - Essential provisions for every building
 - Account for 30-60% of total building cost
- Important issues of BSE:
 - Energy efficiency in buildings
 - Indoor air quality
 - Sustainable/green building





機電工程署
EMSD



ENG

繁體

简体

《建築物能源效益條例》 The Buildings Energy Efficiency Ordinance



空調裝置
Air-conditioning installation



電力裝置
Electrical installation



升降機及自動梯裝置
Lift & escalator installation



照明裝置
Lighting installation



Indoor air quality (IAQ) certification scheme

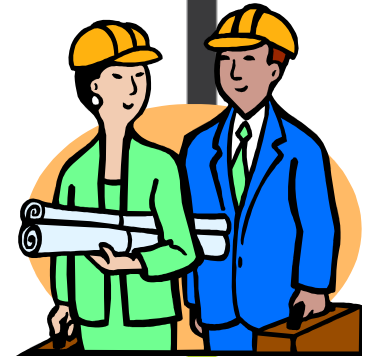


Building Services Engineers are green building professionals

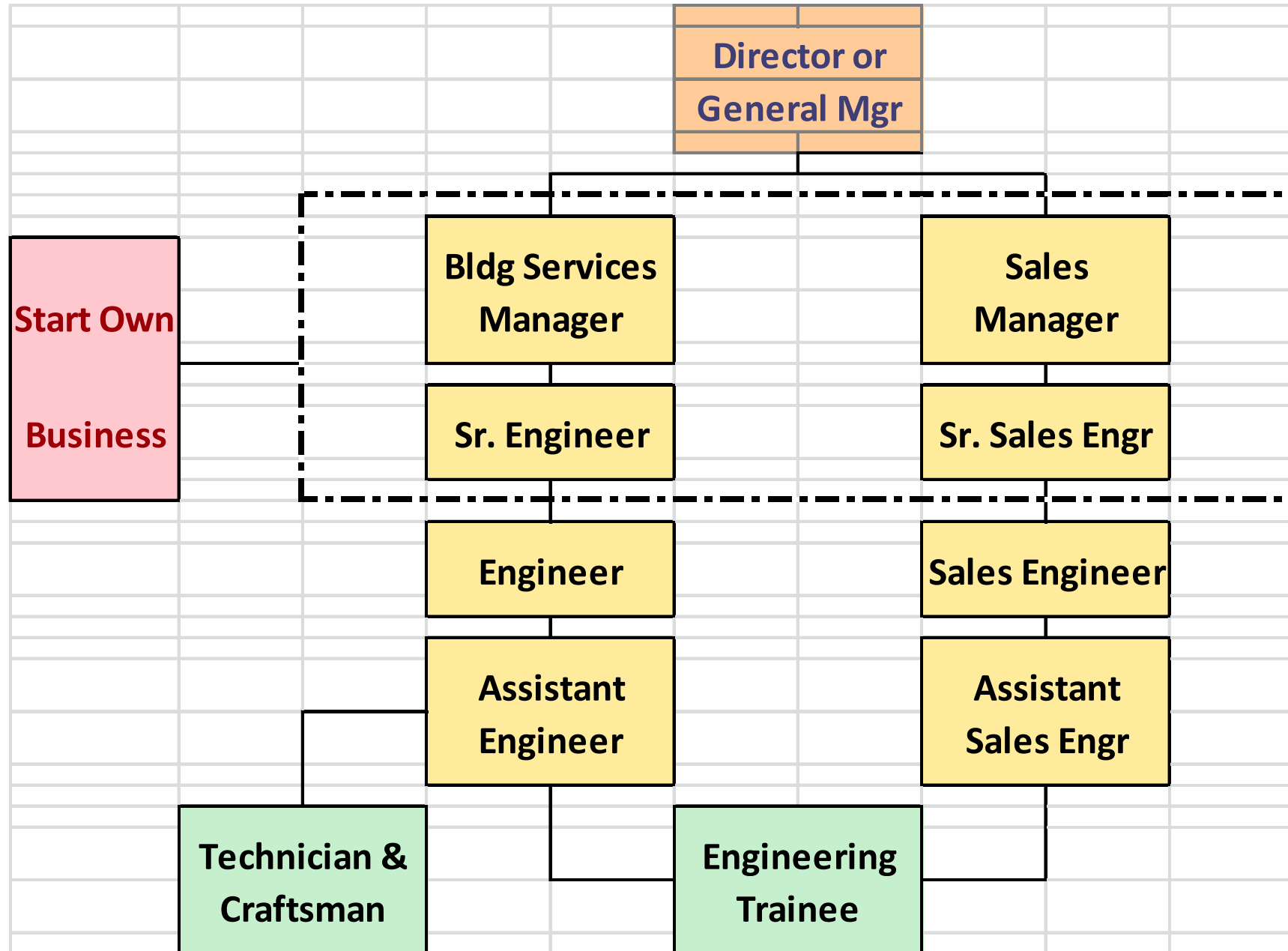


Prospects of BSE Graduates

- Building Services Engineers are in high demand and employment prospects are very good
- Job opportunities for BSE graduates:
 - Building services design consultants
 - Engineering contractors
 - Properties developer/management
 - Public utility (e.g. CLP, MTR)
 - Government department (e.g. EMSD)
 - Equipment supplier/manufacturer
- BSE not only focus on new building design, but also operation & management of existing buildings (for whole life cycle of a building)
 - Such as hotel management, facilities management

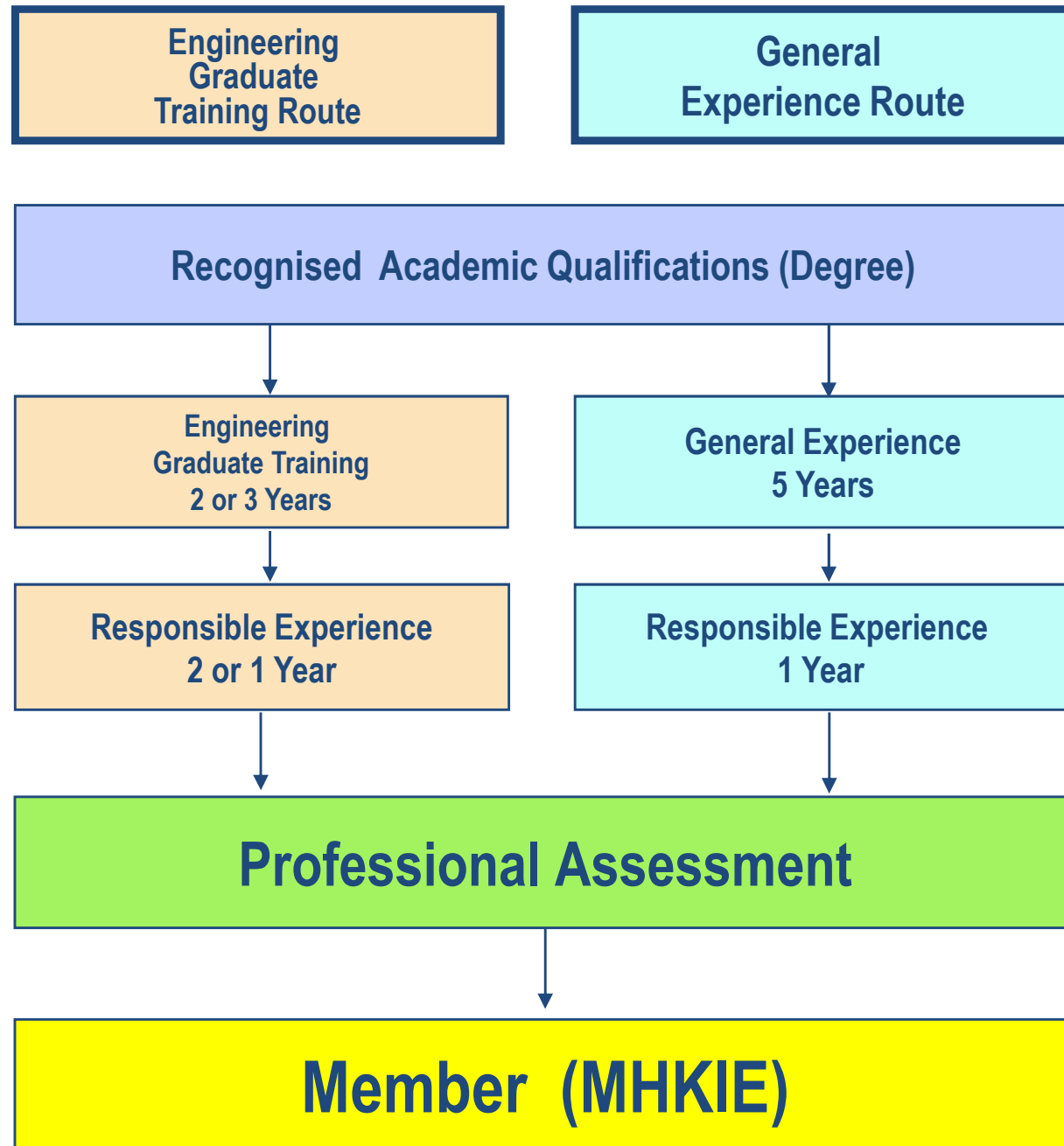


BSE Career Path



(Source: HKIE Building Services Division)

HKIE Route to Corporate Membership



(Source: HKIE Building Services Division)